

ABSTRACT OF THE DISCLOSURE

An ellipsoidal axes setting unit sets major and minor axis of an ellipsoid based on cross sectional position information and 5 ellipsoidal parameters input by a user while viewing a display. A major axis end detector unit, a front view minor axis end detector unit, and a side view minor axis end detector unit detect ends of the major and minor axes based on the major and minor axes set at the ellipsoidal axes setting unit and a target tissue surface image 10 for each time phase output from an edge extractor unit. A major/minor axes setting unit selects appropriate lengths of the major and minor axes from the input ends of the major and minor axes and outputs the selected lengths to a region-of-interest generator unit where a three-dimensional region of interest is generated.